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IS 6116 (1992): Dental equipment - Dental patient chair
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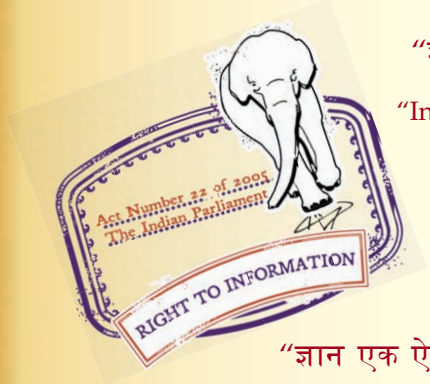

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IS 6116 : 1992
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(पहला पुनरीक्षण)

Indian Standard

DENTAL EQUIPMENT — DENTAL PATIENT CHAIR — SPECIFICATION

(First Revision)

UDC 615 : 478·65·616·314-089

BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

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Indian Standard

DENTAL EQUIPMENT — DENTAL PATIENT CHAIR — SPECIFICATION

(First Revision)

NATIONAL FOREWORD

This Indian Standard (First Revision) which is identical with ISO 6875 : 1988 'Dental patient chair', issued by the International Organization for Standardization (ISO), was adopted by the Bureau of Indian Standards on the recommendations of the Dentistry Sectional Committee (MHD 8) and approval of the Medical Equipment and Hospital Planning Division Council.

This standard was first published in 1971 and covered performance and other requirements for dental chairs. Its first revision has been undertaken to align it with the latest practices being followed at the international level.

The text of this standard has been approved as suitable for publication as Indian Standard without deviations. Certain terminology and conventions are, however, not identical to those used in Indian Standards. Attention is particularly drawn to the following:

a) Wherever the words 'International Standard' appear referring to this standard, they should be read as 'Indian Standard'.

b) Comma (,) has been used as a decimal marker while in Indian Standards the current practice is to use a point (.) as the decimal marker.

The technical committee responsible for the preparation of this standard has reviewed the provisions of the following International Standards appearing in the normative references of ISO 6875 : 1988 and has decided that they are acceptable for use in conjunction with this standard:

ISO 1942 : 1983 Dental vocabulary (since revised)

ISO 4211 : 1979 Furniture — Assessment of surface resistance to cold liquids

ISO 7000 : 1984 Graphic symbols for use on equipment — Index and synopsis

ISO 7494 Dental units (since published in 1990)

ISO 9680 Dental operating light (to be published)

ISO 9687 Dental equipment — Graphical symbols (to be published)

IEC 417 : 1973 Graphical symbols for use on equipment

IEC 601-1 : 1977 Safety of medical electrical equipment — Part 1 : General requirements (since revised)

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test, shall be rounded off in accordance with IS 2 : 1960 ' Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in the standard.

Introduction

This International Standard takes priority over IEC 601-1 as specified in the individual clauses of this International Standard.

Only the specifications laid down in this International Standard are applicable.

This International Standard refers to IEC 601-1 : 1977, the basic standard on safety of medical electrical equipment, wherever relevant, by stating the respective clause numbers of IEC 601-1.

1 Scope

This International Standard applies to all dental patient chairs, regardless of their construction and also regardless of whether they are electrically powered or not. It specifies requirements, test methods and details of marking for dental patient chairs.

For dental units, see ISO 7494 and for dental operating lights, see ISO 9680.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards listed below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 1942 : 1983, *Dental vocabulary.*

ISO 4211 : 1979, *Furniture — Assessment of surface resistance to cold liquids.*

ISO 7000 : 1984, *Graphical symbols for use on equipment — Index and synopsis.*

ISO 7494 : — [1], *Dental units.*

ISO 9680 : — [1], *Dental operating light.*

ISO 9687 : — [1], *Dental equipment — Graphical symbols.*

IEC 417 : 1973, *Graphical symbols for use on equipment.*

IEC 601-1 : 1977, *Safety of medical electrical equipment — Part 1: General requirements.*

3 Definitions

For the purposes of this International Standard, the following definitions and, where relevant, definitions given in clause 2 of IEC 601-1 apply.

dental patient chair: Permanently fixed or free-standing chair, adjustable in height and posture, used for supporting a patient in the seated or supine position and having the means for positioning the head of the patient for dental treatment.

4 Classification

4.1 According to type of protection against electric shock

Dental patient chairs may be classified as follows:

a) **Class I equipment**

Equipment in which protection against electric shock does not rely on basic insulation only, but which includes an additional safety precaution in such a way that means are provided for the connection of accessible conductive parts to the protective (earth) conductor in the fixed wiring of the installation in such a way that accessible conductive parts cannot become live in the event of a failure of the basic insulation.

b) **Class II equipment**

Equipment in which protection against electric shock does not rely on basic insulation only, but in which additional safety precautions such as double insulation or reinforced insulation are provided, there being no provision for protective earthing or reliance upon installation conditions.

4.2 According to degree of protection against electric shock

Dental patient chairs belong to type B equipment.

1) To be published.

Class I or II equipment or equipment with an internal electrical power source providing an adequate degree of protection against shock, particularly regarding:

— allowable leakage currents;

— reliability of the protective earth connection (if present).

Type B equipment is, for example, suitable for intentional external and internal application to the patient, excluding direct cardiac application.

4.3 According to mode of operation

Dental patient chairs are a type of equipment with intermittent operation.

4.4 Marking or identification

The classification of the class and type shall be marked or identified in accordance with 7.2.6.

5 Requirements and testing

Electrical requirements are only applicable to electrically powered dental patient chairs.

There are, however, general requirements in IEC 601-1 referred to, which are applicable to non-electrical dental patient chairs as well.

5.1 General provisions for tests

Sequence of tests according to IEC 601-1, Appendix C.

All tests described in this International Standard are type tests. Unless otherwise specified, tests shall not be repeated. This applies specifically to the dielectric strength tests, which shall be made only on the manufacturer's premises or in test laboratories.

Since some of the tests described are destructive tests, the dental patient chair tested shall not be used afterwards.

The rating of components shall be inspected to check that it is appropriate for the application intended.

Where a component or equipment part has specified ratings exceeding those appropriate to its use in the equipment, it does not have to be tested for such a wider range.

Compliance is considered to be fulfilled if all relevant tests of this International Standard are passed successfully.

Dental patient chairs, or parts thereof, using materials or having forms of construction different from those detailed in this International Standard shall be acceptable if it can be demonstrated that an equivalent degree of safety is obtained.

5.2 Environmental conditions

5.2.1 Transport and storage

Clause 1.4 a) of IEC 601-1 applies.

5.2.2 Operation

Clause 1.4 b) of IEC 601-1 applies.

5.2.3 Power supply

The dental patient chair shall have a mains supply with the following characteristics:

a) a rated voltage not exceeding 250 V single-phase;

b) a low internal impedance of 0,1 ohm;

c) voltage fluctuations generally not exceeding ± 10 % of the nominal voltage, not including short-time fluctuations (for example, duration less than 1 s) at irregular intervals such as caused by operation of X-ray generators or similar equipment;

d) voltages which are practically sinusoidal and forming a practically symmetrical supply system in case of poly-phase supply;

e) a frequency which does not deviate by more than 1 Hz from the nominal value;

f) a frequency which does not deviate by more than 1 Hz from the nominal value up to 100 Hz and by more than 1 % between 100 Hz and 1 kHz;

g) the protective measures as specified in a forthcoming IEC Standard on electrical installations in hospitals and in medically used rooms outside hospitals.

5.2.4 Ambient temperature, humidity, atmospheric pressure

5.2.4.1 After the dental patient chair being tested has been set up for normal use, tests shall be carried out under operating conditions at

a) an ambient temperature within the range from 15 °C to 35 °C;

b) a relative humidity within the range from 45 % to 75 %.

c) an atmospheric pressure within the range from 860 mbar to 1060 mbar (645 mmHg to 795 mmHg).

5.2.4.2 The equipment shall be protected from other conditions which might affect the validity of the tests (for example, draughts).

5.2.4.3 In cases where ambient temperatures cannot be maintained, the test conditions shall be consequently modified and the results adjusted accordingly.

5.2.5 Other conditions

Clauses 4.6 a), b), d) of IEC 601-1 apply.

5.2.6 Supply and test voltages, type of current, nature of supply, frequency

Clause 4.7 of IEC 601-1 applies.

5.2.7 Preconditioning

Clause 4.8 of IEC 601-1 applies.

5.2.8 Repairs and modifications

Clause 4.9 of IEC 601-1 applies.

5.2.9 Moisture preconditioning treatment

Clause 4.10 of IEC 601-1 applies.

Tests should be carried out in the sequence given in Appendix C of IEC 601-1.

5.3 General design

5.3.1 Requirements

5.3.1.1 Dental patient chairs shall be designed, constructed and manufactured so that, when properly transported, stored, installed, used and maintained according to the manufacturer's instructions, they cause no danger which could reasonably be foreseen to the patient, to the operating personnel or to the surroundings in normal use and in single fault condition.

5.3.1.2 The dental patient chair shall have the strength and rigidity necessary to resist the stresses to which it may be subjected in normal dental practice without risk of introducing fire, electrical shock, or accident hazard.

Any item of equipment recommended by the manufacturer for use in conjunction with the dental patient chair shall not render the chair unsafe.

5.3.1.3 Edges and corners of components and parts accessible to the patient or personnel shall be finished such as to avoid injury to the patient or operator.

5.3.1.4 The headrest, armrest, backrest, legrest and footrest if provided should be designed and constructed in such a way that the patient can sit or lie in a relaxed position and that personnel can work in ergonomically good working positions.

5.3.1.5 Those dental patient chairs which are intended to be permanently fixed on the floor shall have provision for this (see 5.8.3).

5.3.2 Testing

5.3.2.1 Visually inspect the equipment with the naked eye at normal visual acuity to determine compliance with the requirements.

5.3.2.2 If the product also passes all the following tests described in this International Standard, it shall be considered that these requirements are fulfilled.

5.4 Headrest

5.4.1 Construction

5.4.1.1 Requirement

The headrest shall be capable of withstanding without failure or permanent deformation the force specified in 5.4.1.2 which simulates unintentional movements and the weight of the patient's head including any additional load applied by the operator and the force imparted to the headrest by the patient due to arching of his body.

5.4.1.2 Testing

Apply to the dental patient chair in the fully reclined position and with the headrest fully extended a force of 300 N for 1 min in the centre of the headrest in a direction downwards and perpendicular to the plane of the headrest.

5.4.2 Releasing mechanism

5.4.2.1 Requirement

Any headrest releasing mechanism shall be located in such a position or be of such a design that it cannot be accidentally released or activated, but shall be capable of being activated quickly when necessary.

5.4.2.2 Testing

Visually inspect the equipment with the naked eye at normal visual acuity to determine compliance with the requirement.

5.5 Armrest

5.5.1 Requirement

Armrests, if provided, shall be capable of withstanding without failure or permanent deformation the force specified in 5.5.2. Armrests designed to be horizontally or vertically movable shall incorporate a release mechanism or detents capable of withstanding the loads specified in 5.5.2 without their function becoming permanently impaired.

5.5.2 Testing

Using a 100 mm diameter soft-coated pad, apply to the armrest at the most critical location a 335 N vertical downward force and subsequently a 220 N horizontal force, exerted inwards and outwards.

5.6 Moving parts

5.6.1 Requirement

Moving parts that may constitute a hazard under normal working conditions shall be protected or guarded to minimize the risk of injury to the patient and personnel.

The distance between power-activated moving parts and counterparts accessible to patient's and personnel's hands and fingers shall be less than 10 mm when fully opened or a minimum of 20 mm when fully closed.

Adequate safety features shall be provided to protect the patient and personnel from accessible power-activated moving parts. If necessary such precautions shall include limit switch plates or equivalent precautionary devices.

All electrical cables and hydraulic tubes shall be adequately protected against wear, fracture, and damage due to rubbing or strain incurred during normal operation of the chair.

5.6.2 Testing

Measure and visually inspect the equipment with the naked eye at normal visual acuity to determine compliance with the requirement.

5.7 Operating controls

5.7.1 Requirement

Controls shall be located in a position or be of such design that they cannot be accidentally activated.

Operating symbols according to ISO 9687 shall be used where applicable.

5.7.2 Testing

Visually inspect the equipment with the naked eye at normal visual acuity to determine compliance with the requirement.

5.8 Loading capacity

5.8.1 Mass distribution

Mass distribution shall be in accordance with table 1.

Table 1 — Mass distribution

Part of dental patient chair	Mass distribution kg
Head and neck	10
Upper trunk and upper arms	45
Lower trunk, lower arms and hands, thigh	55
Legs and feet	25
Total	135

5.8.2 Vertical lift

5.8.2.1 Requirement

Dental patient chairs shall be capable of supporting and lifting a distributed mass of at least 135 kg (see table 1) plus the additional mass of equipment mounted on the chair as specified by the manufacturer as additional lifting capability. The chair shall not move in the vertical direction by more than 10 mm/h.

5.8.2.2 Testing

Subject the test piece to a mass distributed in accordance with table 1 plus the additional mass of equipment mounted on the chair as specified by the manufacturer as maximum accessory lifting capability.

Activate the chair for three uninterrupted up-and-down movements. Then operate the chair intermittently at the control switch three times each during three further complete up-and-down movements.

Leave the test piece in the middle position for 1 h and measure the vertical movement.

5.8.3 Tipping and stability

5.8.3.1 Requirement

No tipping about the base edge shall be acceptable on either the loaded or unloaded chair during the full backrest, seat, legrest and longitudinal adjustment motions.

5.8.3.2 Testing

The test shall be performed on a horizontal solid flat surface.

The dental chair is fitted in accordance with the manufacturer's instructions, with the backrest in the upright (and supine) position.

Apply a moment of 270 N·m relative to the centre of the base with the back being oriented in the upright and supine-position vertically at any compass position (360° base circle) to a loaded and unloaded dental patient chair, installed according to the manufacturer's instructions.

When installed in accordance with the manufacturer's instructions and with the mass distributed as specified in table 1 and the additional mass of equipment mounted on the chair as specified by the manufacturer as the maximum accessory lifting capability, no part of the base of the chair shall tip, fail or lift off the ground when two complete cycles of the back are performed without interruption immediately followed by intermittent operating at the control switch "on and off" three times during each full half-cycle.

The chair shall not tip or fail when an additional force of 90 N is applied in the approximate oral cavity location during an up-and-down stroke of the chair back and when in its most extended position.

5.9 Bursting pressure

5.9.1 Requirement

A pressure system used in a dental patient chair the rupture of which would constitute a hazard shall be strong enough to withstand without bursting or leaking the pressures as specified in 5.9.2.

5.9.2 Testing

Any pressure system shall be subjected to a hydrostatic pressure.

A ratio shall be established between the hydrostatic test pressure and the rated pressure as indicated in figure 1.

Connect the system to a suitable hydraulic pump. Raise the pressure gradually to 40 % of the final hydrostatic test pressure and hold at that pressure for 60 s. Then increase the pressure to the specified hydrostatic test pressure and hold for 3 min. The results are unacceptable if the sample bursts or leaks.

5.10 Pressure relief

5.10.1 Requirement

The patient chair shall be equipped with a means for safe relief pressure for all parts in which pressure might be generated in the event of fire.

5.10.2 Testing

Visually inspect the equipment with the naked eye at normal visual acuity to determine compliance with the requirement.

5.11 Emergency stop

5.11.1 Requirement

The dental patient chair shall incorporate at least one emergency stop which is located so that it can easily be activated by the dentist and the operating personnel.

5.11.2 Testing

In activating the emergency stop, all functions which can be a hazard shall be stopped instantly.

5.12 Upholstery and padding

5.12.1 Material

5.12.1.1 Requirement

Only covering materials that lend themselves readily to cleaning and disinfection with agents recommended by the manufacturer should be used. Such covering materials should be resistant to penetration by water and should not absorb nor trap mercury.

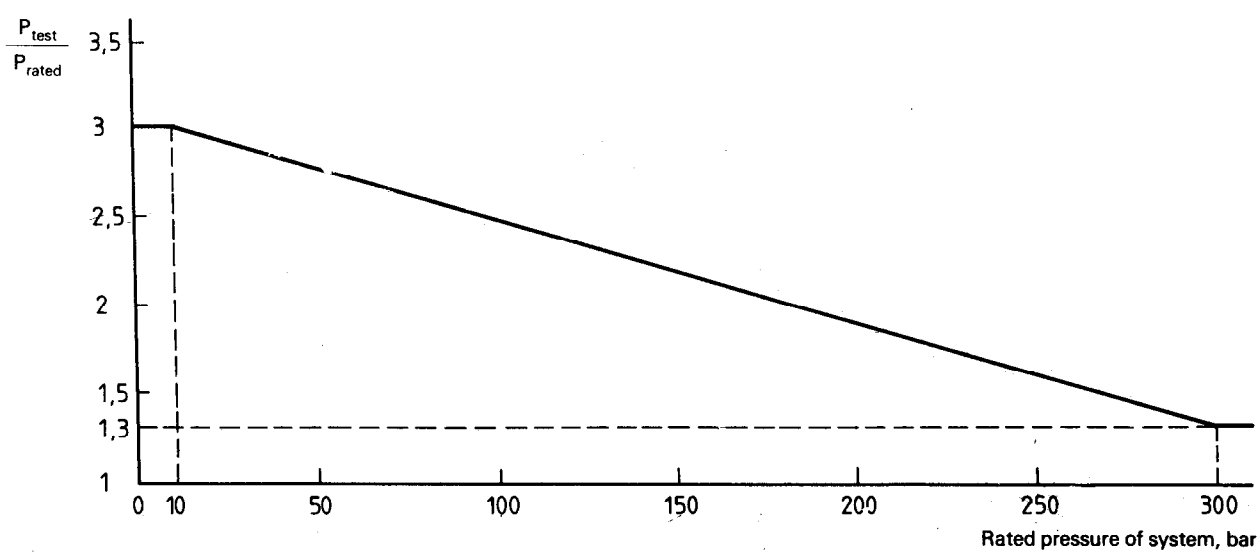

Figure 1 — Ratio test pressure and rated pressure

5.12.1.2 Testing

Visually inspect the equipment with the naked eye at normal visual acuity to determine compliance with the requirement.

5.12.2 Flammability

5.12.2.1 Requirement

The upholstery and padding shall not catch fire and the resultant charring, if any, shall be not greater in length than 30 mm in any direction measured from the nearest point of the cigarette.

NOTE — Quantitative tests are under consideration.

5.12.2.2 Testing

Precondition the dental patient chair for 48 h at a temperature of (23 ± 2) °C and at a relative humidity of (65 ± 5) %. After this conditioning, place three burning cigarettes on three different parts of the cushion. Allow the cigarettes to burn completely.

Visually inspect the equipment with the naked eye at normal visual acuity to determine compliance with the requirement.

5.13 Failsafe device

5.13.1 Requirement

In case of a single fault condition, e.g. failure of a limit switch, additional protective means shall be provided such as mechanical limits to prevent injury to the patient or operating personnel.

5.13.2 Testing

On dental patient chairs which are power-activated and controlled by limit switches, deliberately bypass such limit switches one by one (single fault condition) and then operate the chair through its full range of motion to ensure that it does not result in collapse of the chair or damage to the chair that would be harmful to the patient sitting in it or to the operating personnel.

5.14 Cleaning and disinfection

5.14.1 Requirement

All exterior parts of the dental patient chair shall be capable of undergoing cleaning without deteriorating the chair's surface or markings by using agents recommended by the manufacturer.

All exterior parts of the dental patient chair shall be capable of undergoing disinfection without deteriorating the chair's surface or markings when using the relevant chemical agents recommended by the manufacturer.

5.14.2 Testing

Cleaning and disinfection test shall be in accordance with ISO 4211. Cleaning and disinfection agents shall be applied for 24 h.

NOTE — The requirements in 5.15 to 5.24 are primarily applicable to electrically equipped dental patient chairs.

5.15 Power input

Clauses 7.1 and 7.3 of IEC 601-1 apply.

5.16 Single fault conditions

Clause 12 of IEC 601-1 applies.

5.17 Protection against electric shock hazards

Clause 13 of IEC 601-1 applies.

5.18 Requirements related to classification

5.18.1 Class I equipment

Clause 14.1 of IEC 601-1 applies.

5.18.2 Class II equipment

Clause 14.2 of IEC 601-1 applies.

5.18.3 Classes I and II equipment

Clause 14.4 of IEC 601-1 applies, limited to classes I and II.

5.18.4 Type B

Clause 14.6 of IEC 601-1 applies, limited to class B.

5.19 Limitation of voltage and/or current

Clauses 15 b) and c) of IEC 601-1 apply.

5.20 Enclosures and protective covers

Clause 16 of IEC 601-1 applies.

5.21 Insulation and protective impedances

Clause 17 of IEC 601-1 applies.

5.22 Earthing and potential equalization

Clauses 18 a) and g) of IEC 601-1 apply.

5.23 Continuous leakage currents and patient auxiliary currents

5.23.1 Requirements

The requirements are given by the allowable values specified in table 2.

Table 2 — Allowable values of continuous leakage and patient auxiliary currents, in milliamperes

Current path	Type B	
	N.C.[1]	S.F.C.[2]
Earth leakage current see subclause 19.3 e)	0,5	1[3), 4)]
Enclosure leakage current	0,1	0,5
Patient leakage current	0,1	0,5
Patient leakage current (mains voltage on the signal input part and signal output part)	—	5
Patient auxiliary current	0,01 0,1	0,5

1) N.C.: normal condition.

2) S.F.C.: single fault condition.

3) The only single fault condition for the earth leakage current is the interruption of one supply conductor at a time [see subclause 19.2 a) and figure 16 of IEC 601-1].

4) See subclause 19.3 e) of IEC 601-1.

5.23.2 Testing

The earth leakage current, the enclosure leakage current, the patient leakage current and the patient auxiliary current shall be tested:

a) after the dental patient chair has been brought up to normal operating temperature in accordance with the requirements of clause 7 of IEC 601-1;

b) after the moisture preconditioning treatment as described in subclause 4.10 of IEC 601-1. The measurements shall be carried out with equipment located outside the humidity cabinet and shall commence 1 h after equipment has been taken out of this cabinet, and has been placed in an environment with a temperature less than or equal to t, where t is the temperature of the humidity cabinet. During testing, those measurements, which do not energize equipment, shall be made first.

5.24 Dielectrical strength

5.24.1 Requirement

The dielectrical strength shall be sufficient to withstand the test voltages as specified in IEC 601-1, subclauses 20.1 and 20.2.

5.24.2 Testing

The test voltage for a single-phase equipment and for three-phase equipment (to be tested as single-phase equipment) shall be applied to the insulation parts as described in subclauses 20.1 and 20.2 of IEC 601-1 during 1 min and according to tables V and VI of IEC 601-1:

a) immediately after warming up to operating temperature and switching off the equipment; and

b) immediately after the moisture preconditioning treatment (as described in subclause 4.10) with the equipment de-energized during the test and kept in the humidity cabinet; and

c) after any required disinfection procedure with the equipment de-energized (see subclause 44.7).

Initially, not more than half the prescribed voltage shall be applied; it shall then be raised over a period of 10 s to the full value, which shall be maintained for 1 min.

Any test performed during manufacture should be conducted according to IEC 601-1, Appendix B.

5.25 Stability and transportability

Clause 24 of IEC 601-1 applies.

5.26 Excessive temperatures

Clause 42 of IEC 601-1 applies.

5.27 Spillage

Clause 44.3 of IEC 601-1 applies.

5.28 Leakage

Clause 44.4 of IEC 601-1 applies.

5.29 Human error

Clauses 46.1 to 46.3 of IEC 601-1 apply.

5.30 Interruption of power supply

Clauses 49.1 to 49.3 of IEC 601-1 apply.

5.31 Fault conditions causing overheating and/or mechanical damage

Clause 52 of IEC 601-1 applies.

5.32 Enclosures and covers

Clause 55.2 of IEC 601-1 applies.

5.33 Components and general assembly

Clauses 56.1 b) and d), clauses 56.2 to 56.10 and clause 56.11 b) of IEC 601-1 apply.

5.34 Mains parts, components and layout

Clause 57 of IEC 601-1 applies.

5.35 Protective earth terminals

Clause 58 of IEC 601-1 applies.

5.36 Construction and layout

Clause 59 of IEC 601-1 applies.

6 Sampling

Where possible, all type tests shall be made on one representative sample of the dental patient chair being tested.

7 Manufacturer's instructions and marking

Dental patient chairs shall be accompanied by documents containing relevant information as specified in 7.1 to 7.7.

7.1 Accompanying documents

7.1.1 General

Clause 6.8.1 of IEC 601-1 applies.

Information should be available in the language of the country where the product is to be used.

7.1.2 Instructions for use

Clause 6.8.2 of IEC 601-1 applies.

In addition, the full range of movement shall be quoted.

7.1.3 Technical description

Clauses 6.8.3 a), b) and d) of IEC 601-1 apply.

In addition, at least the following information shall be provided by the manufacturer:

a) overall dimensions of the dental patient chair;

b) overall dimensions of the base plate and service location interfaces if applicable, details of interface surfaces and methods of retention (bolts, etc.) and electrical supplies and other services;

c) minimum space requirements and recommendations for chair installation within the dental operatory;

d) information on field assembly and mounting of the dental patient chair;

e) mass;

f) electrical characteristics including wiring diagram (voltage, frequency, fuse values);

g) maximum lifting capability;

h) maximum torque capability for accessory mountings;

i) overall movements;

j) step-by-step instructions for the operation and routine maintenance of the patient chair, including illustrations, showing the location of and explanation of each control and other features relating to safety consideration for intended use;

k) directions for cleaning and disinfecting the patient chair.

7.1.4 Check

The accompanying documents shall be checked to ensure that all the information specified in 7.1.1 to 7.1.3 is provided.

7.2 Marking on outside of mains-operated dental patient chairs

Marking on the outside of dental patient chairs or dental patient chair parts and on the outside of dental patient chairs or dental patient chair parts without direct supply mains connection shall be as specified in table 3.

Mains-operated dental patient chairs, including separable components thereof which have a mains part, shall be provided at least with permanently affixed and clearly legible markings on the outside of the major part of the dental chairs as described in table 3.

Table 3 — Marking on outside of dental patient chairs

Requirements as specified in	Subject	Mains-operated equipment
7.2.1	Indication of origin	x
7.2.2	Model or type reference	x
7.2.3	Connection to supply	x[1]
7.2.4	Supply frequency, Hz	x[1]
7.2.5	Power input	x[1]
7.2.6	Classification	x[2]
7.2.7	Mode of operation	x[2]
7.2.8	Fuses	x[2]
7.2.9	Mechanical stability	x[2]

1) For non-permanently installed equipment only; for other equipment, see also clause 6.3 a) of IEC 601-1.

2) If applicable.

7.2.1 Indication of origin

Clause 6.1 e) of IEC 601-1 applies.

7.2.2 Model or type reference

Clause 6.1 f) of IEC 601-1 applies.

7.2.3 Connection to supply

Clause 6.1 g) of IEC 601-1 applies.

7.2.4 Supply frequency (in hertz)

Clause 6.1 h) of IEC 601-1 applies.

7.2.5 Power input

Clause 6.1 j) of IEC 601-1 applies.

7.2.6 Classification

Subclauses 4.1 and 4.2 of this International Standard apply.

7.2.7 Mode of operation

Clause 6.1 m) of IEC 601-1 applies.

7.2.8 Fuses

Clause 6.1 n) of IEC 601-1 applies.

7.2.9 Marking of compliance with requirements of 7.2

Clause 6.1 x) of IEC 601-1 applies.

7.3 Marking on inside of dental patient chairs or their parts

Clauses 6.2 a), e), f), h), j), k), l), m) of IEC 601-1 apply.

7.4 Marking of controls

Clauses 6.3 a), b), c), e) of IEC 601-1 apply.

7.5 Symbols

Symbols used for marking in accordance with 7.3 and 7.4 shall be in accordance with ISO 9687.

Compliance with the requirements of this clause shall be checked by comparison with the symbols of ISO 9687.

7.6 Colours of insulation of conductors

Clause 6.5 of IEC 601-1 applies.

7.7 Indicating lights and push-buttons

Clause 6.7 of IEC 601-1 applies.

8 Packaging

8.1 Dental patient chairs shall be packaged for transportation in such a way that no damage may occur during anticipated transport conditions.

8.2 If several packages exist, they shall be marked on the outside to facilitate the assembly and installation.

Bureau of Indian Standard

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Telephones : 331 01 31, 331 13 75

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Regional Offices :	Telephone
Central : Manak Bhavan, 9 Bahadur Shah Zafar Marg, NEW DELHI 110002	331 01 31 331 13 75
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